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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,267	08/29/2005	Gundula Roth	PTGF-03105US	9294

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MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER	
PRASAD, NEIL	

ART UNIT	PAPER NUMBER
2822	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/539,267	ROTH ET AL.	
	Examiner	Art Unit	
	Neil Prasad	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :6/16/05; 9/22/06; 12/13/06; 5/4/07.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on *6/16/02; 9/22/06; 12/13/06; 5/4/07* was filed after the mailing date of the instant application on 6/16/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US Patent No. 6,717,349) in view of Matsubara et al. (US Patent No. 6,509,651)

Regarding claim 1, Wang discloses a luminous body with prolonged fluorescence lifetime comprising:

- An activator and coactivator including at least cerium (col. 2, lines 5-16)

Wang does not disclose the luminous body comprising Zinc. However, in at least column 8, line 5, Matsubara discloses doping a luminous body substrate with Zinc. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Wang's luminous body with Matsubara's Zinc dopants because it can make fluorescent light at a particular desired wavelength (col. 88, lines 6-13).

Regarding claim 2, Wang discloses the use of europium as a dopant (col. 2, line 15). Wang also discloses additional dopants that correspond to the claimed empirical formula, consisting of elements as claimed, and consisting of coefficients of the claimed range (col. 1, lines 31-35; col. 2, lines 5-16).

Additionally, Wang discloses the claimed invention except for the luminous body comprising silicate-germanate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose silicate-germanate as a substrate in a fluorescent luminous body, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416.

Regarding claim 3, Wang discloses the luminous body to comprise an aluminum-gallate (col. 2, line 5) doped with europium (col. 2, line 15) and additional dopants that correspond to the claimed empirical formula, consisting of elements as claimed, and consisting of coefficients of the claimed range (col. 1, lines 31-35; col. 2, lines 5-16).

Regarding claim 4, Wang discloses the use of europium as a dopant (col. 2, line 15). Wang also discloses additional dopants that correspond to the claimed empirical formula, consisting of elements as claimed, and consisting of coefficients of the claimed range (col. 1, lines 31-35; col. 2, lines 5-16).

Regarding claim 5, Wang discloses the luminous body to comprise an aluminum-gallate (col. 2, line 5) doped with europium (col. 2, line 15) and

additional dopants that correspond to the claimed empirical formula, consisting of elements as claimed, and consisting of coefficients of the claimed range (col. 1, lines 31-35; col. 2, lines 5-16).

Regarding claim 6, Wang discloses a luminous body capable of being a single type or a mixture of two or more types (col. 2, lines 5-17)

Regarding claim 7, Wang discloses the luminous layer in preparation of an LED (col. 1, lines 1-5).

Regarding claim 8, Matsubara discloses emitting white or colored light (abstract).

Regarding claim 9, it is an inherent property of fluorescent material to emit a different color of light when switched off. One reason for this is the lack of impurity excitation and emission when no electricity is present.

Regarding claim 10, Wang discloses the luminous layer to be in an LED, which is a compact energy saving lamp (col. 1, lines 1-5).

Regarding claim 11, Wang discloses an optical device comprising a wavelength converting part comprising a luminous body, which emits light upon excitation based on light emitted from an LED element (col. 1, lines 38-44) comprising:

- An activator and coactivator including at least cerium (col. 2, lines 5-16)

Wang does not disclose the luminous body comprising Zinc. However, in at least column 8, line 5, Matsubara discloses doping a luminous body substrate with Zinc. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Wang's luminous body with Matsubara's Zinc dopants because it can make fluorescent light at a particular desired wavelength (col. 88, lines 6-13).

Regarding claims 14-17, Wang discloses the use of europium as a dopant (col. 2, line 15) and additional dopants that correspond to the claimed empirical formula, consisting of elements as claimed, and consisting of coefficients of the claimed range (at least col. 1, lines 31-35; col. 2, lines 5-16).

Additionally, Wang discloses the claimed invention except for the luminous body comprising silicate-germanate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose silicate-germanate as a substrate in a fluorescent luminous body, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416.

4. Claims 12-13 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara et al. (US Patent No. 6,509,651) in view of Wang et al. (US Patent No. 6,717,349).

Regarding claim 12, Matsubara discloses an optical device (col. 1, lines 38-44) comprising:

- An LED element (9)
- A power feeding part for mounting said LED element thereon and feeding power to said LED element (10/11)
- A light transparent sealing part for sealing said LED element (9) and said power feeding part integrally with each other (see Figure 3a)

- A wavelength converting part (15) for emitting light upon excitation based on light from said LED element (see Figure 3a; col. 6, lines 39-41)
- Wherein the luminous body comprises zinc (col. 8, line 5)

Matsubara does not disclose the luminous body to comprise an activator and coactivator. However, Wang, in at least column 2, lines 5-17, discloses the use of at least one activator and coactivator selected from the claimed group. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an activator and coactivator to allow specific colors of light to be emitted, and to allow adjustments that can provide more uniform color and brightness (col. 2, lines 16-19).

Regarding claim 18, Matsubara discloses the wavelength converting part to include light transparent sealing resin for sealing the LED element (col. 6, line 38).

Regarding claim 19, Matsubara discloses the body to be sealed with a light transparent glass (15).

Regarding claim 20, Matsubara discloses the luminous body layer to be planar (Figure 3a).

Regarding claim 21, Matsubara discloses the resin to have light-permeable filler, and to be hardened into a particular shape (Figure 3a-16).

Regarding claim 22, Wang discloses the wavelength converting part to be excited upon exposure to blue light or UV light in the range as claimed (col. 2, lines 20-24).

Regarding claim 13, Matsubara discloses an optical device (col. 1, lines 38-44) comprising:

- An LED element (9)
- A light guiding part for guiding light emitted from said LED lamp (13)
- A wavelength converting part (15) for emitting light upon excitation based on light based on light guided through said light guiding part from said LED element (see Figure 3a; col. 6, lines 39-41)
- A lighting part for lighting based on light emitted through said wavelength converting part (15)

Matsubara does not disclose the luminous body to comprise an activator and coactivator. However, Wang, in at least column 2, lines 5-17, discloses the use of at least one activator and coactivator selected from the claimed group. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an activator and coactivator to allow specific colors of light to be emitted, and to allow adjustments that can provide more uniform color and brightness (col. 2, lines 16-19).

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara et al. (US Patent No. 6,509,651) in view of Wang et al. (US Patent No. 6,717,349), and further in view of Morlotti (US Patent No. 5,003,181).

Regarding claim 13, Takashima discloses an optical device comprising:

- An LED element (9)
- A light guiding part for guiding light emitted from said LED lamp (13)

- A lighting part for lighting based on light emitted through said wavelength converting part (15)

Matsubara does not disclose the luminous body to comprise an activator and coactivator. However, Wang, in at least column 2, lines 5-17, discloses the use of at least one activator and coactivator selected from the claimed group. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an activator and coactivator to allow specific colors of light to be emitted, and to allow adjustments that can provide more uniform color and brightness (col. 2, lines 16-19).

Matsubara may not clearly disclose a light guiding part for guiding light emitted from said LED lamps. However, in at least column 4, lines 67-68, Morlotti discloses a light guiding means having a linear or arched end portion to receive and guide the emitted light. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Takashima's fluorescent LED device with Morlotti's light guide to more efficiently excite the fluorescent material.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshimura et al. (US Publication No. 2005/0001225) disclose the use of a light guide to capture light emitted from an LED (paragraphs 96, 194, 216). Hamamatsu et al. (US Publication No. 2006/0261308).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil Prasad whose telephone number is 571-270-1430. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Neil Prasad

7/20/07

Kevin M. Picardat
Primary Examiner